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Introduction

Wang, Rendon, Champion, Ellen, & Walk (hereafter, Wang et al., 2016) identify the incentive problem that is characterized as a "moral hazard" in the DoD's current use of the Truth in Negotiations Act (TINA). One of the examples they concentrated on was the ineffective use of TINA in the context of firm-fixed-price (FFP) contracts. Specifically, a contractor under an FFP contract that is subject to TINA has the following ill incentive: The fear of being held accountable for any significant unfavorable cost discrepancy (i.e., the actual incurred cost is significantly below the ex-ante cost estimate negotiated with the DoD as the basis for contract fixed-price) would strongly motivate the contractor to shirk (i.e., reduce cost-saving effort) or even engage in cost padding (e.g., by opportunistically incurring or allocating more costs to the government contracts). Such behavior leads to deadweight welfare loss that is ultimately borne by taxpayers.

This study extends Wang et al. (2016) to a broader scope and greater depth. In particular, we propose to customize the use (or disuse) of TINA in the DoD for various contracting scenarios involving specific acquisition category (ACAT I through III), stage of the cycle (Milestones A, B, and C), and contract type. The bottom line is: we don't believe the TINA policy should be prescribed via a "one-size-fits-all" approach; rather, the use or disuse of TINA should be customized to various situations.

We continue to employ an economics-based, incentive-centric approach that focuses on investigation of agents' (i.e., DoD contractors') incentives under various settings. Then we generate our policy recommendation through a "with" and "without" TINA comparison.

TINA is a *federal* acquisition regulation, which goes beyond the DoD and DoN. We expect that significant cost savings can be generated for the DoD and DoN, *as well as other federal government agencies*, by providing such a framework described above.

The remainder of the report is organized as follows. The next section describes the DoD acquisition process. Following that is a section that describes how TINA is implemented in DoD acquisition via a "one-size-fits-all" approach. Building on those two sections, the following one (Customizing the Use [or Disuse] of TINA in the DoD Acquisition Process) tailors the use or disuse of TINA (i.e., TINA waiver) to various circumstances. We offer a conclusion in the final section.

DoD Acquisition Process: Category, Cycle, and Contract Type

The DoD procures goods and services through contracts. Schwartz (2014) interprets "acquisition" as "a broad term that applies to more than just the purchase of an item or service"; rather, "the acquisition encompasses the design, engineering, construction, testing, deployment, sustainment, and disposal of weapons or related items purchased from a contractor."

DoD acquisition is governed by the Federal Acquisition Regulation (FAR) along with the Defense Federal Acquisition Regulation Supplement (DFARS). Additional regulations such as TINA also provide rules.

Acquisition Category (ACAT)

Depending on program costs, DoD acquisition is divided into three categories. The biggest ticket purchase is Category I (ACAT I), also called Major Defense Acquisition Programs (MDAPs). The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]) defines MDAPs as programs with more than $480 million (fiscal year 2014 dollars) in research, development, test, and evaluation (RDT&E) expenditures; or at least $2.79 billion (fiscal year 2014 dollars) in procurement funding; or as designated as a major defense acquisition program by the milestone decision authority (10 U.S.C., § 2430, Major Defense Acquisition Program Defined). A similar Category I definition, namely *ACAT IA*, also called Major Automated Information System (MAIS), with different dollar thresholds, exists for DoD acquisition of Automated Information Systems (AIS).

The next tier procurement is Category II, which is a major system defined as 10 U.S.C. 2302d (Reference (h)), yet which does not meet criteria for ACAT I or IA. Finally, Category III (ACAT III) includes any program that does not meet criteria for ACAT II or above, or any AIS program that is not a MAIS.

The following Table 1, reproduced from DoD Instruction (DoDI) 5000.02, *Operation of the Defense Acquisition System* (USD[AT&L], 2013), details the definitions of each acquisition category.

It is worth noting that as the acquisition category decreases from I to III, so does the level of oversight from the DoD and Congress. One should expect that the closest and most supervision being applied to MDAPs. Another difference between ACAT I (MDAPs) and non-MDAPs is the degree of information asymmetry between the DoD and the contractor. MDAPs are inherently more technologically complex than ACAT II and III programs and hence information asymmetry is more serious to start with for MDAPs.

A GAO (2015) report indicates that

> DOD requested $168 billion in fiscal year 2014 to develop, test, and acquire weapon systems and other products and equipment. About 40 percent of that total is for major defense acquisition programs or ACAT I programs. DOD also invests in other, non-major ACAT II and III programs that are generally less costly at the individual program level. These programs typically have fewer reporting requirements and are overseen at lower organizational levels than ACAT I programs, although they may have annual funding needs that are just as significant.

Table 1. Description and Decision Authority for ACAT I–III Programs

ACAT	Reason for ACAT Designation	Decision Authority
ACAT I	• MDAP (10 U.S.C. 2430 (Reference (n))) ○ Dollar value for all increments of the program: estimated by the DAE to require an eventual total expenditure for research, development, and test and evaluation (RDT&E) of more than $480 million in Fiscal Year (FY) 2014 constant dollars or, for procurement, of more than $2.79 billion in FY 2014 constant dollars ○ MDA designation • MDA designation as special interest[1]	ACAT ID: DAE or as delegated ACAT IC: Head of the DoD Component or, if delegated, the CAE (not further delegable)
ACAT IA[2,3]	• MAIS (10 U.S.C. 2445a (Reference(n))): A DoD acquisition program for an Automated Information System[4] (AIS) (either as a product or a service[5]) that is either: ○ Designated by the MDA as a MAIS program; or ○ Estimated to exceed: ▪ $40 million in FY 2014 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred in any single fiscal year; or ▪ $165 million in FY 2014 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, and deployment, and incurred from the beginning of the Materiel Solution Analysis Phase through deployment at all sites; or ▪ $520 million in FY 2014 constant dollars for all expenditures, for all increments, regardless of the appropriation or fund source, directly related to the AIS definition, design, development, deployment, operations and maintenance, and incurred from the beginning of the Materiel Solution Analysis Phase through sustainment for the estimated useful life of the system. • MDA designation as special interest[1]	ACAT IAM: DAE or as delegated ACAT IAC: Head of the DoD Component or, if delegated, the CAE (not further delegable)
ACAT II	• Does not meet criteria for ACAT I or IA • Major system (10 U.S.C. 2302d (Reference (n))) ○ Dollar value: estimated by the DoD Component Head to require an eventual total expenditure for RDT&E of more than $185 million in FY 2014 constant dollars, or for procurement of more than $835 million in FY 2014 constant dollars ○ MDA designation[2] (10 U.S.C. 2302 (Reference (n)))	CAE or the individual designated by the CAE[6]
ACAT III	• Does not meet criteria for ACAT II or above • An AIS program that is not a MAIS program	Designated by the CAE[6]

1. The Special Interest designation is typically based on one or more of the following factors: technological complexity; congressional interest; a large commitment of resources; or the program is critical to the achievement of a capability or set of capabilities, part of a system of systems, or a joint program. Programs that already meet the MDAP and MAIS thresholds cannot be designated as Special Interest.
2. When a MAIS program also meets the definition of an MDAP, the DAE will be the MDA unless delegated to a DoD Component or other official. The DAE will designate the program as either a MAIS or an MDAP, and the Program Manager will manage the program consistent with the designation.
3. The MDA (either the DAE or, if delegated, the DoD Chief Information Officer (CIO) or another designee) will designate MAIS programs as ACAT IAM or ACAT IAC. MAIS programs will not be designated as ACAT II.
4. AIS: A system of computer hardware, computer software, data or telecommunications that performs functions such as collecting, processing, storing, transmitting, and displaying information. Excluded are computer resources, both hardware and software, that are an integral part of a weapon or weapon system; used for highly sensitive classified programs (as determined by the Secretary of Defense); used for other highly sensitive information technology (IT) programs (as determined by the DoD CIO); or determined by the DAE or designee to be better overseen as a non-AIS program (e.g., a program with a low ratio of RDT&E funding to total program acquisition costs or that requires significant hardware development).
5. Acquisitions of services that satisfy or are expected to satisfy the definition of a MAIS in 10 U.S.C. 2445c, Reference (n), will comply with this instruction. All other acquisitions of services will comply with Enclosure 9 of DoD Instruction 5000.02 (Reference (b)).
6. As delegated by the Secretary of Defense or Secretary of the Military Department.

Acquisition Cycle

Schwartz (2014) identifies

> a three-step process of identifying the required weapon system, establishing a budget, and acquiring the system. These three steps are organized as follows:
>
> 1. The Joint Capabilities Integration and Development System—for identifying requirements.
> 2. The Planning, Programming, Budgeting, and Execution System—for allocating resources and budgeting.
> 3. The Defense Acquisition System—for developing and/or buying the item. (Schwartz, 2014, Summary)

These three steps (each of which is a system unto itself), taken together, are often referred to as “Big ‘A’” acquisition, in contrast to the Defense Acquisition System, which is referred to as “little ‘a’” acquisition.”

Figure 1, reproduced from Schwartz (2014), depicts the three-step process.

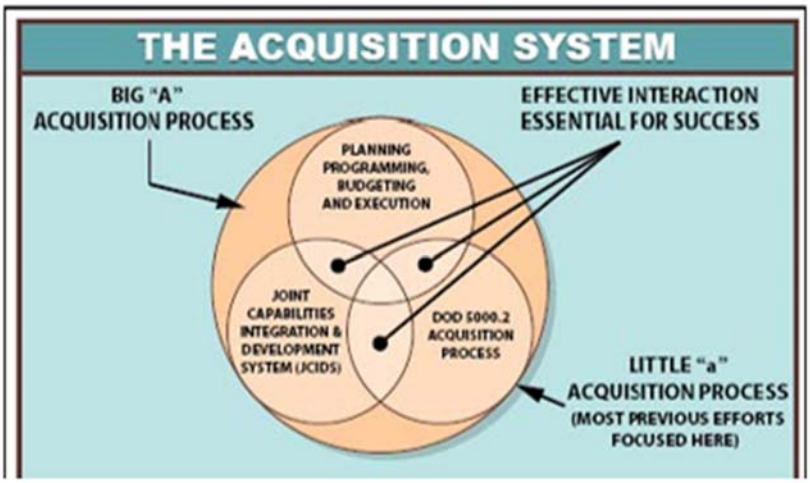

Figure 1. The DoD’s Defense Acquisition Structure

The cycle of the defense acquisition process contains three stages, namely, pre-acquisition, acquisition, and sustainment, with critical reviews identified by Milestones A, B, and C. The following Figure 2, reproduced from Schwartz (2014), describes the acquisition cycles.

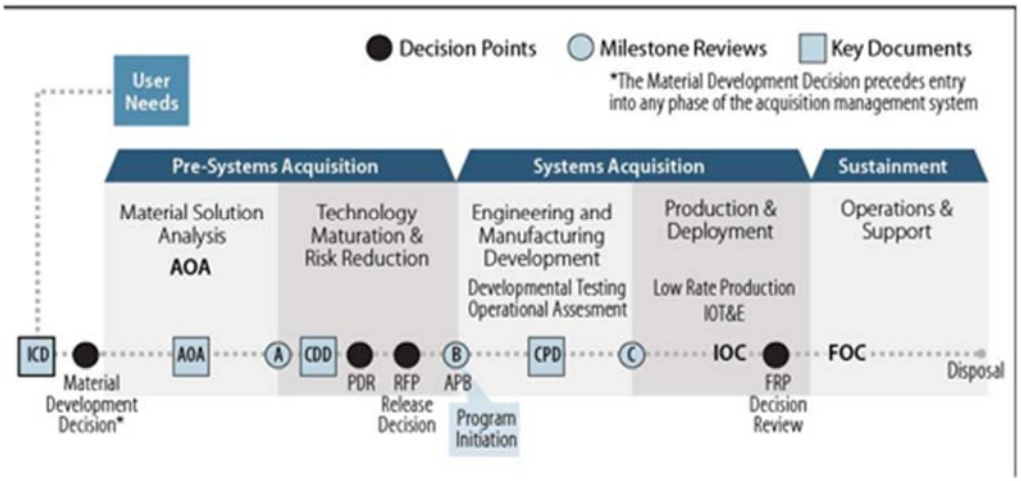

Figure 2. Defense Acquisition Milestones

As illustrated by Figure 2, each milestone needs to be passed in order to reach the next stage. In particular, three key phases—Technology Maturation & Risk Reduction, Engineering and Manufacturing Development, and Production and Deployment—immediately follow the passage of Milestones A, B, and C, respectively.

Schwartz (2014) points out,

> The official responsible for deciding whether a program meets the milestone criteria and proceeds to the next phase of the acquisition process is referred to as the Milestone Decision Authority (MDA). Depending on the program, the MDA can be the Under Secretary of Defense (Acquisition, Technology, & Logistics), the head of the relevant DOD component, or the component acquisition executive. (p. 7)

Contract Type

The contract types are broadly classified into two categories: fixed-price contracts and cost-plus contracts. One can imagine a spectrum with the firm-fixed-price (FFP) contract on one end, under which the contractor assumes all the risks and has the highest incentive to save costs. At the opposite end of the spectrum is the cost-plus-fixed-fee (CPFF) contract,[1] where the government pays the contractor its realized cost and sets a fixed fee (profit). The fixed fee is supposed to be independent of actual cost, although its level is implicitly related to the size of the project.[2] Under CPFF, the government bears all the cost risk and hence leaves the contractor little incentive to minimize cost. In between the two extremes, FFP and CPFF, are the various forms of incentive contracts including fixed-price-incentive-fee (FPIF) contracts, cost-plus-incentive-fee (CPIF) contracts, and cost-plus-award-fee (CPAF) contracts. The following descriptions of each contract type are based on the FAR, except for the "budget-based-cost-plus" scheme, which is not defined by the FAR and has no application thus far in the DoD.

Firm-Fixed-Price (FFP) Contracts

A firm-fixed-price contract provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This contract type places maximum risk and full responsibility for all costs and resulting profit or loss on the contractor. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden upon the contracting parties.

Fixed-Price-Incentive-Fee (FPIF) Contracts

A fixed-price incentive-fee contract is a fixed-price contract that provides for adjusting profit and establishing the final contract price by a formula based on the relationship of final negotiated total cost to total target cost. A fixed-price incentive contract specifies a target cost, a target profit, a price ceiling (but not a profit ceiling or floor), and a profit adjustment formula. These elements are all negotiated at the outset. The price ceiling is the maximum that may be paid to the contractor, except for any adjustment under other contract clauses. When the contractor completes performance, the parties negotiate the final cost, and the final price is established by applying the formula. When the final cost is less than the target cost, application of the formula results in a final profit greater than the target profit.

---

[1] The CPFF contract is the benchmark case for the cost-plus contract. Put another way, a "cost-plus" contract without mentioning whether it is "cost-plus-fixed-fee" or "cost-plus-incentive-fee" or "cost-plus-award-fee" would refer to a CPFF contract. However, throughout this paper, we reserve the use of "cost-plus" contract as a general category including all variations of cost-plus contracts.

[2] The cost-plus-a-percentage-of-cost contract type, which was used sometimes in U.S. DoD acquisition practice before the 1960s, is prohibited by FAR 16.102. This particular type of cost-plus contract rewards rather than penalizes a firm's cost inefficiency.

Conversely, when final cost is more than target cost, application of the formula results in a final profit that is less than the target profit, or possibly a net loss. If the final negotiated cost exceeds the price ceiling, the contractor absorbs the difference as a loss. Because the profit varies inversely with the cost, this contract type provides a positive, calculable profit incentive for the contractor to control costs.

Cost-Plus-Fixed-Fee (CPFF) Contracts

A cost-plus-fixed-fee contract is a cost-reimbursement contract that provides for payment to the contractor of a negotiated fee that is fixed at the inception of the contract. The fixed fee does not vary with actual cost, but may be adjusted as a result of changes in the work to be performed under the contract. This contract type permits contracting for efforts that might otherwise present too great a risk to contractors, but it provides the contractor only a minimum incentive to control costs.

Cost-Plus-Incentive-Fee (CPIF) Contracts

A cost-plus-incentive-fee contract is a cost-reimbursement contract that provides for an initially negotiated fee to be adjusted later by a formula based on the relationship of total allowable costs to total target costs. This contract type specifies a target cost, a target fee, minimum and maximum fees, and fee adjustment formula. After contract performance, the fee payable to the contractor is determined in accordance with the formula. The formula provides, within limits, for increases in the fee above the target fee when total allowable costs are less than target costs, and decreases in the fee below the target fee when total allowable costs exceed target costs. This increase or decrease is intended to provide an incentive for the contractor to manage the contract effectively. When total allowable cost is greater than (or less than) the range of costs within which the fee-adjustment formula operates, the contractor is paid total allowable costs, plus the minimum (or maximum) fee.

Cost-Plus-Award-Fee (CPAF) Contracts

A cost-plus-award-fee contract is a cost-reimbursement contract that provides for a fee consisting of (a) a base amount (which may be zero) fixed at inception of the contract and (b) an award amount, based upon a judgmental evaluation by the government, sufficient to provide motivation for excellence in contract performance. Since the award fee determination is made unilaterally by the government, this contract type is only appropriate when achievement is measurable by subjective evaluation rather than objective data, which is unlikely to be true under significant information asymmetry.

Budget-Based-Cost-Plus-Scheme (BBCPS) Contracts

A budget-based-cost-plus-scheme contract is a refinement of CPIF in the following sense: (a) Under BBCPS, the job of estimating target cost is shifted from the government to the contractor, and (b) moreover, both target fee and cost share coefficient vary with the estimated target cost rather than being constants under CPIF. A carefully designed BBCPS contract will desirably induce the contractor's "truth-telling" behavior and hence effectively mitigates the agency problem and reduces information asymmetry.

BCPS belongs to the larger topic of "menu of contracts" discussed in the principal-agent literature. This body of literature has broad applications in executive compensation contracts, regulation, and government procurement contracts (Laffont & Tirole, 1986, 1993; McAfee & McMillan, 1987; Melumad & Reichelstein, 1989; Reichelstein, 1992).

Selecting contract type along with price requires sound judgment. The contracting officer also has to consider the implications of the contracting method. For example, FAR 16.102 (a) states that "contracts resulting from sealed bidding shall be firm-fixed-price contracts or fixed-price contracts with economic price adjustment." Most often a decision on

contract type and price is a negotiation process that hopefully will lead to a fair risk sharing and price that motivates the contractor to minimize cost and deliver a quality product.

The Use of TINA in DoD Acquisition

TINA Defined

TINA was first enacted in 1962 and has been amended many times since then. Wang et al. (2016) states,

> In a nutshell, TINA requires contractors (often sole-source) to submit "cost or pricing data" when they negotiate the price of a contract with the federal government. The contractors must certify that the information they provide is "current, complete, and accurate." Failing to disclose truthful information could lead to civil or criminal investigation. The intention of TINA is to protect the government and taxpayers from being ripped off by better informed contractors.

TINA Applicability

TINA applies to a wide range of procurements that include both fixed-price and cost-plus contracts. Any negotiated prime contracts or prime contract modifications that exceed $750,000 are subject to TINA. In a similar fashion, for any negotiated subcontracts or subcontract modifications greater than $750,000, certified cost or pricing data is required.

"Cost or Pricing Data" Defined

TINA defines *cost or pricing data* as "all facts that, as of the date of price agreement, or, if applicable, an earlier date agreed upon by the parties that is as close as practicable to the date of price agreement, prudent buyers and sellers would reasonably expect to affect price negotiations significantly."

In general, pure judgments are not deemed to be "facts" and hence are not cost or pricing data. However, Calhoon and Sybert (2012) point out,

> Cost or pricing data includes more than just historical accounting data; they are all the 'facts' reasonably relevant to evaluate estimates of future costs and to the validity of costs already incurred. This may include, but is not limited to:
>
> 1. Vendor quotes;
> 2. Nonrecurring costs;
> 3. Information on changes in production methods and in production or purchasing volume;
> 4. Data supporting projections of business prospects and objectives and related operations costs;
> 5. Unit-cost trends such yield rates and labor efficiency;
> 6. Make-or-buy decisions;
> 7. Estimated resources to attain business goals; and
> 8. Some information on significant management decisions (Calhoon & Sybert, 2012, p. 13)

Although some of the above information is hard facts, estimates and projections also can be used as "cost or pricing" data. It is worth noting that for most major weapon programs

where technology is unbelievably complex, a big component of a cost estimate is based on faithful estimates and educated projections.

TINA Exemptions

According to Calhoon & Sybert (2012), TINA can be exempted if one or more following situations applies:

1. Adequate Price Competition
2. Prices Set by Law or Regulation
3. Commercial Items
4. Pricing Actions Less Than $750,000
5. Exceptional Cases—Waiver by Head of Contracting Activity (p. 7)

Note that TINA waivers are rarely given; consequently, TINA governs most major DoD contracts.

TINA Is a "One-Size-Fits-All" Approach

From what is described above, one can see that TINA is a "one-size-fits-all" approach. TINA is essentially a blanket application with very limited exception. In particular, TINA application does not (at least not directly) vary with acquisition category, cycle, and contract type. Intuitively, this approach does not make sense. In the subsequent chapter, we detail our arguments against the one-size-fits-all approach and accordingly propose to tailor the use of TINA to various combinations of acquisition category, cycle, and contract type.

Customizing the Use (or Disuse) of TINA in the DoD Acquisition Process

In this section, we continue our investigation of the role of TINA in the context of DoD procurement. The objective is to provide a guideline for the use or disuse of TINA for various combinations of acquisition category, cycle, and contract type.

We employ an economics-based, incentive-centric approach that focuses on investigation of agents' (i.e., DoD contractors') incentives under various settings. We generate our policy recommendation through a "with" and "without" TINA comparison.

Two key decisions need to be made to answer our research question. Namely, what is the right contract type for each combination of category and cycle, and further, given the selected optimal contract type, shall we impose or waive the TINA?

Table 2. Graphical Illustration of the Research Question

Technological uncertainty and cost vagueness descending →

Information asymmetry descending ↓

Acquisition Category (Product)	Pre-Milestone A	Pre-Milestone B	Pre-Milestone C	Production and Deployment	Operations
MDAP					
ACAT II					
ACAT III					

Table 2 illustrates the task graphically. On the vertical dimension, as the acquisition category descends from I to III, so does the information asymmetry between the government

and the contractor. On the horizontal dimension, as the life cycle matures, the technological uncertainty gets resolved progressively and the cost vagueness runs down.

According to the *Defense Acquisition Guidebook* (DAG) provided by Defense Acquisition University, various contracts ranging from CPFF to FFP represent different risk allocations between the buyer (i.e., the DoD) and the seller (i.e., the contractor). Figure 3, reproduced from the DAG, illustrates this.

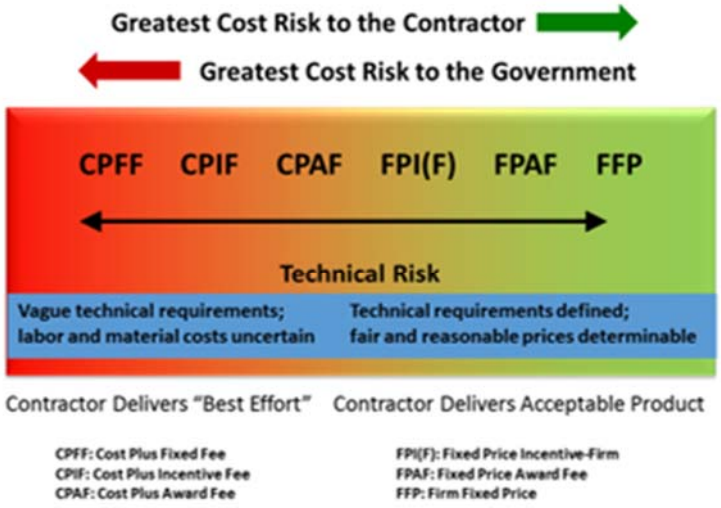

Figure 3. Risk to Contract Types

Moreover, the DAG also provides guidelines for the typical contract type that is used at different stages of the acquisition life cycle. Figure 4 is replicated from DAG.

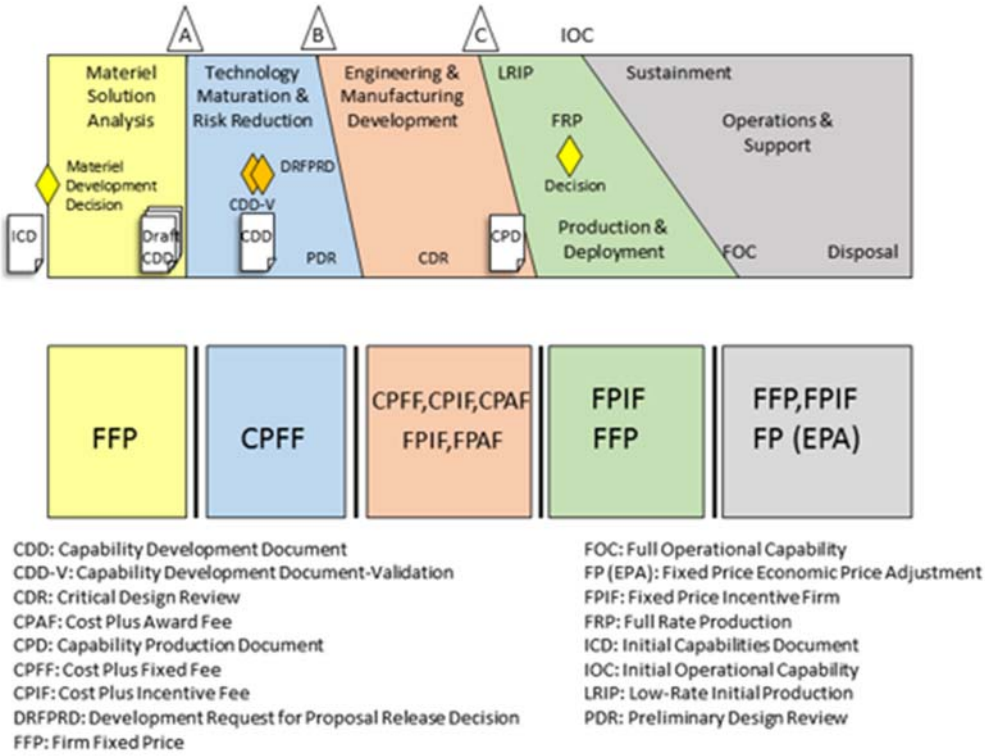

Figure 4. Typical Contract Types by Acquisition Phase

Applying the aforementioned framework of DAG to our Table 2 setting, which has one more dimension, acquisition category, we propose the following use of contract types for each cell of our Table 2.

The bottom line is: As the acquisition category descends from I to III, within the same life-cycle stage (with the exception of the first and last stage), we gradually shift toward the contract type that allocates more risk to the contractor and, in the meantime, takes away the risk from the DoD's shoulders. This induces contractors' better efforts.

Table 3. Contract Types

	Pre-Milestone A	Pre-Milestone B	Pre-Milestone C	Production and Deployment	Operations
MDAP	FFP	CPFF	CPIF	FPIF	FFP
ACAT II	FFP	CPIF	CPAF	FPIF/FFP	FFP
ACAT III	FFP	CPAF	FPIF	FFP	FFP

Now our task is to suggest either the use or disuse of TINA for each of the cells in Table 3. Let's first tabulate our recommendations in the following Table 4, followed by detailed explanations.

Table 4. Customizing the Use (Disuse) of TINA

	Pre-Milestone A (Material Solution Analysis)	Pre-Milestone B (Technology Maturity & Risk Reduction)	Pre-Milestone C (Engineering & Manufacturing Development)	Production and Deployment	Operations and Support
MDAP	FFP (TINA)	CPFF (TINA)	CPIF (No TINA)	FPIF (No TINA)	FFP (No TINA)
ACAT II	FFP (TINA)	CPIF (TINA)	CPAF (TINA)	FPIF/FFP (Maybe/MaybeNot TINA)	FFP (Maybe/Maybe Not TINA)
ACAT III	FFP (TINA)	CPAF (TINA)	FPIF (TINA)	FFP (TINA)	FFP (TINA)

Detailed Discussions/Justifications for Table 4:

1. The most notable part of this table is that it proposes a deviation from the current practice of TINA, which is essentially a one-size-fits-all prescription. Namely, we recommend varying the use or disuse of TINA with respect to acquisition category, acquisition life-cycle stage, and the corresponding preferred contract type.
2. For the red-colored cells, that is, ACAT I (MDAP) starting from Pre-Milestone C and continuing through the rest of the acquisition cycle, we propose to do away with the use of TINA. The polar case here, that is, the use of FFP in the context of MDAP, is thoroughly analyzed by Wang et al. (2016), where the authors identify the incentive problem that is characterized as a "moral hazard," that is, a lack of effort from the contractor. Specifically, a contractor under an FFP contract that is subject to TINA has the following ill incentive: The fear of being held accountable for any significant unfavorable cost discrepancy (i.e., the actual incurred cost is significantly below the ex-ante cost estimate negotiated with the DoD as the basis for contract fixed-price) would strongly motivate the contractor to shirk (i.e., reduce cost-saving effort) or even engage in cost padding (e.g., by opportunistically incurring or allocating more costs to the government contracts). Such behavior leads to deadweight welfare loss that is ultimately borne by taxpayers.

   As shrewdly pointed out by Rogerson (1994), "TINA cannot force defense contractors to reveal the lowest possible cost that they could produce at if they exerted an optimal effort. Rather, it essentially tells them that the price they negotiate must be close to the cost they actually incur."

   It is worth noting that for ACAT I (MDAP), even at the very late stage of the acquisition cycle, d*ue to the extreme complex technology and production process*, significant information asymmetry nevertheless exists between the contractor and the DoD. Consequently, the unverifiable part of

the production cost is still significant and there is plenty of room for contractors to shirk or engage in cost padding. Hence, it is very essential to realize the unintended negative consequence of enforcing TINA in this particular setting, and a lax use or even disuse of TINA is preferred here to induce the contractors to reveal their best-effort cost.

The other two red-colored cells, that is, MDAP at Pre-Milestone C (Engineering & Manufacturing Development), and Post-Milestone C (Production and Deployment), adopt CPIF and FPIF, respectively. Both CPIF and FPIF belong to incentive contracts which are designed to induce cost-saving effort from contractors. To the extent that TINA exposes compliance risk to contractors in case of ex-post unfavorable cost variance, imposing TINA in these two cells would have similar unintended consequences, as discussed in Wang et al. (2015), hence we recommend a similar fix, that is, the disuse of TINA.

3. For the yellow-colored cells, we suggest no changes to the current TINA use. These cells include:
    a. ACAT III across all the life-cycle stages

       That is, no additional TINA waiver[3] is recommended for ACAT III. The primary reason for keeping TINA in place for ACAT III is the modesty of information asymmetry between the DoD and the contractor. Therefore, the verifiability of the program cost is good. When most of the cost information is verifiable, TINA is an effective mechanism to deter defective pricing.

    b. ACAT II life-cycle stages up to Pre-Milestone C

       Under this category, CPIF and CPAF are prescribed for Pre-Milestone B and Pre-Milestone C, respectively. In general, cost-plus contracts inherently suffer from the moral hazard problem. Hence, removing TINA does not make the problem go away. However, TINA does reduce the "defective pricing" incentive by imposing the litigation risk, at least for the verifiable part of the program cost. So the net benefit of "with TINA" minus "without TINA" is positive and we suggest a "stay-put" strategy.

       For the cell that intersects ACAT II and Pre-Milestone A (Material Solution Analysis), the prescribed contract type is FFP, yet we suggest the use of TINA. This is in contrast to what we suggest for the polar case discussed in ACAT I. The major reason is that for Pre-Milestone A, which is a pre-system acquisition stage, most of the conceptual refinement work is performed through analogy or parametric estimating methods. To the extent that the estimation is based on a similar existing item or mathematical model, a big part of the cost is verifiable. As argued before, TINA is an effective way of deterring "defective pricing" when the cost information is verifiable.

[3] The current applicable TINA waiver still applies, for example, if classified as commercial items

c. ACAT I (MDAP) life-cycle stages before Pre-Milestone B

For the same reason mentioned in the last paragraph, for the FFP contract used in Pre-Milestone A MDAP, we propose to keep TINA in place. For the cell that intersects MDAP and Pre-Milestone B, TINA is also retained to mitigate the incentive of engaging in "defective pricing."

4. For the purple-colored cells, we recommend the flexible use of TINA. Use or disuse of TINA should be dependent upon individual cases. On one hand, ACAT II, even at the last two stages of the life cycle, should still demonstrate non-trivial information asymmetry between the DoD and the contractor; therefore, our worry about the contractor's ill incentive under TINA and the related "moral hazard" problem remains. On the other hand, to the extent that ACAT II is much smaller and less complex than ACAT I (MDAP), the degree of information asymmetry should be much less severe than under MDAP. If the major part of the program cost is verifiable, then enforcing TINA can effectively prevent "defective pricing" from happening. Decision makers must run a horse-racing between the two offsetting factors and accordingly choose the use or disuse of TINA to maximize social welfare. For example, one can argue that if Technology Readiness Level (TRL) reaches 8 or above, then the use of TINA is preferred.

Conclusion

TINA, as it currently stands, is a "one-size-fits-all" prescription. Specifically, TINA does not differentiate among various settings involving different acquisition category, acquisition life cycle, and corresponding preferred contract type. We propose to tailor the use or disuse of TINA to different scenarios by considering the economic incentives created by TINA enforcement. In some settings where TINA is misplaced, we propose to drop TINA to remove the ill incentives and consequent unintended negative consequences. In other settings where TINA brings more benefit than cost, we recommend keeping TINA in place. In a few settings where the judgment is not unambiguous, we propose to leave the discretion to decision makers.

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